

CLAIMS

I claim:

1. The use of a hot bed of carbon based and/or containing material for the purpose of decomposing oxygen containing organic compounds, high molecular weight organic compounds, steam, nitrogen oxides, carbon dioxide, and other undesirable compounds and/ or gases.
2. The addition of alkali carbonates, silicates, oxides, and/or hydroxides to fuels to lower the fusion point of the ash, and/or to increase the usefulness of the ash for various uses such as fertilizer.
3. The casting of molten slag, molten ash, molten rock, etc. into useful shapes such patio blocks, construction blocks, frying pans, furniture, etc. (similar to the casting of cast iron, etc.)
4. A gas producer for the gasification/liquefaction of trash, other wastes, other solid fuels, etc. where in, at or near its bottom, only air/oxygen and /or powdered, gaseous, and/or liquid fuels and/or their hot products are admitted so as to keep its bottom hot enough to keep the ash, etc. in a molten state.
5. The invention of claim 4 wherein higher up in the gas producer steam/carbon dioxide/exhaust is added, with or without additional air/oxygen, etc. in order to convert sensible heat into chemical energy stored in the form of hydrogen and/or carbon monoxide via the water gas reaction and/or like.
6. A water gas generator, drawing run gases off the top, and the blow gases approximately mid-height off the side of the water gas generator so that all rich hydrocarbon gases, oils, and tars, etc. formed via the cracking of oils, etc. added in the top and/or destructively distilled from the solid fuel in the water gas generator go primarily out with the run gases.
7. A gas producer, having excessive height so as to keep the top of the fuel bed relatively cool (preferably not exceeding 750 degrees Fahrenheit) so that any hydrocarbon vapors and/or gases produced are not thermally destroyed before they can be drawn off.

8. Having a detachable and/or droppable bottom on gas producers and water gas generators to facilitate repair, cleaning, etc. similar to cupola practice.
9. Gas producers and water gas generators having their sides, tops, bottoms, etc. cooled with air, gas, and/or steam before the air/gas/steam is injected into the fuel bed within it carrying the absorbed heat back into the fuel bed.
10. The use of turbines, steam type engines, etc. to recover energy from hot gases coming out of gas producers, water gas sets, furnaces, etc. before the gases are drawn in to a cooler/condenser and/or like, taking advantage of the greater volume per mole of hot gases and vapors before the cooler/condenser/like compared with the cool gases and condensed liquids after going through the cooler/condenser/like.
11. The use of gas producers and water gas sets to process trash, waste tires, rendering plant waste, and other types of waste.

FOI b7 - 247-094